AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application. The following listing provides the amended claims with deleted material crossed out and new material underlined to show the changes made.

1. (Previously Presented) A method of specifying playback speed effects for playing a video clip, the method comprising:

a) receiving a set of playback speed effects for the video clip through a set of modifications of a user selectable, directly deformable line bar on a graph with a playback-time axis and a content-time axis that is displayed on a graphical display device, wherein the deformable line bar represents a playback-time in relation to a content-time of the video clip, wherein each of a plurality of points on the line bar represents a particular playback-time and a particular content-time, wherein the set of modifications comprises a click-and-drag operation received from a user on the line bar in order to deform the line bar; and

b) displaying in real-time a presentation of the video clip that accounts for the set of playback speed effects defined for the video clip.

2. (Previously Presented) The method of claim 1, wherein the set of playback speed effects comprises only one playback speed effect.

3. (Previously Presented) The method of claim 1, wherein the set of playback speed effects comprises a plurality of playback speed effects that specify a plurality of playback speeds for a plurality of intervals.

4. (Previously Presented) The method of claim 1 further comprising defining the set of playback speed effects, wherein defining the set of playback speed effects comprises converting the click-and-drag operation into a set of playback speed effect definitions.

5. (Currently Amended) The method of claim 1, wherein receiving said click-and-drag operation comprises monitoring ~~the~~ a location of a cursor controlled by an electronic user input device and ~~the~~ a status of buttons of the electronic user input device.

6. (Previously Presented) The method of claim 5, wherein deforming the line bar comprises receiving a selection, from the electronic user input device, of a portion of the line bar that appears at a first location within a window containing the graph and receiving an input from the electronic user input device commanding a movement of the selected portion to a second location within the window.

7. (Previously Presented) The method of claim 1, wherein displaying in real-time the presentation of the video clip comprises displaying the video presentation without rendering the presentation to a data storage.

8. (Currently Amended) The method of claim 7 further comprising after specifying the set of playback speed effects for the video clip, rendering the video clip to a data storage.

9. (Previously Presented) The method of claim 1, wherein the video clip comprises a plurality of frames, wherein displaying in real-time the presentation of the video clip comprises:

a) selecting a first frame for display at a first playback-time;

b) displaying the first frame for display at the first playback-time;

c) selecting a second frame for display at a second playback-time, wherein the second playback-time is based at least partly on the set of playback speed effects; and

d) displaying the second frame for display at the second playback-time.

10. (Previously Presented) The method of claim 1, wherein the video clip comprises a plurality of frames, wherein displaying in real-time the presentation of the video clip comprises:

a) selecting a first frame for display for a first playback duration based on the

defined set of playback speed effects;

b) displaying the first frame during the first playback duration;

c) selecting a second frame for a second playback duration based on the defined set of playback speed effects; and

d) displaying the second frame during the second playback duration.

11. (Previously Presented) The method of claim 10 further comprising:

a) before displaying the first frame, decompressing the first frame; and

b) before displaying the second frame, decompressing the second frame.

12. (Previously Presented) The method of claim 1, wherein the video clip comprises a composite of a plurality of video clips.

13. (Previously Presented) The method of claim 12, wherein the video clip comprises at least one audio track.

14-15. (Canceled)

16. (Currently Amended) A computer readable medium storing a computer program for specifying playback speed effects for playing a video clip, said computer program for execution by at least one processor, the computer program comprising sets of instructions for:

a) defining a set of playback speed effects for the video clip;

b) displaying in real-time a presentation of the video clip that accounts for the set of playback speed effects defined for the video clip;

c) displaying a graph that represents a playback-time of the video clip in relation to a content-time of the video clip, wherein the graph comprises a playback-time axis and a content-time axis;

d) displaying a line bar on the graph comprising a set of points that each indicate the

playback-time of a particular frame of the video clip and the content-time of the particular frame;

e) receiving user inputs of modifications directly to the line bar; and

[[e]] f) converting the user inputs of direct modifications of the graph into [[a]] the set of playback speed effects.

17. (Currently Amended) The computer readable medium of claim 16, wherein the set of instructions for ~~allowing the user to directly modify~~ receiving user inputs of modifications directly to the line bar comprises a set of instructions for allowing the user to select a portion of the line bar that appears at a first location within a window containing the graph and to move the selected portion to a second location within the window.

18. (Currently Amended) The computer readable medium of claim 16, wherein the set of instructions for displaying in real-time [[a]] the presentation of the video clip comprises a set of instructions for displaying the video presentation without rendering the presentation to a data storage.

19. (Currently Amended) The computer readable medium of claim 16, wherein the video clip comprises a plurality of frames, wherein the set of instructions for displaying in real-time [[a]] the presentation of the video clip comprises sets of instructions for:

a) selecting a first frame for display at a first playback-time;

b) displaying the first frame for display at the first playback-time;

c) selecting a second frame for display at a second playback-time; and

d) displaying the second frame for display at the second playback-time, wherein said second playback-time is determined at least partly by said set of playback speed effects.

20. (Previously Presented) A graphical user interface ("GUI") method for specifying playback speed effects for a video presentation, the method comprising:

a) displaying on an graphical display device a GUI graph of a playback-time of the video presentation relative to a content-time of the video presentation, wherein said GUI graph comprises a playback-time axis, a content-time axis, and a line bar representing the playback-time versus the content-time; and

b) accepting user input that determines a playback speed effect for the video presentation by a selection and direct modification of a portion of the line bar through a drag operation.

21. (Previously Presented) The method of claim 20 further comprising providing a set of controls for selecting portions of the line bar and performing drag operations.

22. (Previously Presented) The method of claim 20, wherein

the playback-time axis represents time during a playback of the video presentation; and

the content-time axis represents time within the video presentation.

23. (Previously Presented) The method of claim 20, wherein the selected portion of the line bar comprises a keyframe.

24. (Original) The method of claim 23, wherein at any time, the keyframe has a value along the playback-time axis and a value along the content-time axis, wherein when the keyframe is selected, the keyframe has a first content-time value, the method further comprising:

when the keyframe is selected, displaying a frame that appears in the video presentation at the first content-time value.

25. (Currently Amended) The method of claim 24 further comprising:

displaying the frame, in the video presentation, that corresponds to the <u>first</u> content-time value of the keyframe when the <u>first</u> content-time value of the keyframe changes during [[a]] <u>the</u> drag operation.

26. (Previously Presented) The method of claim 25 further comprising:

displaying a graphical representation of the video presentation when the keyframe is selected; and

in response to the drag operation moving the graphical representation along the playback-time axis when the drag operation is along the playback-time axis.

27. (Previously Presented) The method of claim 26 further comprising, in response to the drag operation moving the keyframe along the content-time axis when the drag operation is along the playback-time axis.

28. (Previously Presented) The method of claim 24 further comprising, in response to the drag operation, moving the keyframe along the playback-time axis when:

a) the drag operation is along the playback-time axis; and

b) a particular keyboard key is pressed.

29. (Currently Amended) The method of claim 24 further comprising, in response to the drag operation, moving the keyframe along the playback-time axis when:

a) the drag operation is along the playback-time axis; and

b) a particular key on ~~the~~ a keyboard is not pressed.

30. (Previously Presented) The method of claim 25 further comprising, in response to the drag operation, moving the keyframe along the playback-time axis when the drag operation is along the playback-time axis.

31. (Previously Presented) The method of claim 25 further comprising, in response to the drag operation, moving the keyframe along the content-time axis when the drag operation is along the content-time axis.

32. (Previously Presented) The method of claim 25 further comprising:

displaying a graphical representation of the video presentation when the keyframe is selected,

in response to the drag operation:

a) moving the keyframe along the content-time axis when the drag operation is along the content-time axis; and

b) moving the graphical representation along the playback-time axis when the drag operation is along the content-time axis.

33. (Previously Presented) The computer readable medium of claim 16, wherein said computer program further comprises a set of instructions for generating a set of blended frames from at least two frames of said video clip.

34. (Currently Amended) The computer readable medium of claim 33, wherein said set of instructions for generating said set of blended frames comprises sets of instructions for:

a) multiplying a first frame by a first blending parameter;

b) multiplying a second ~~from~~ frame by a second blending parameter; and

c) adding ~~the~~ a result of said multiplying together to produce a blended frame.

35. (Previously Presented) The computer readable medium of claim 34, wherein said computer program further comprises a set of instructions for generating sequential frames of said set of blended frames by changing a magnitude of said first and second blending parameters.

36. (Currently Amended) The method of claim 20, wherein said GUI graph displays said line bar as a curve on said GUI graph.

37. (Canceled)

38. (Previously Presented) The method of claim 28, wherein moving the keyframe along the playback-time axis comprises moving the keyframe without changing the first content-

time value, while displaying the frame in the video presentation that corresponds to the content-time value of the keyframe.

39. (Previously Presented) The method of claim 38, wherein moving the keyframe further comprises setting a new playback-time value for said keyframe.

40. (Currently Amended) The method of claim [[39]] 29, wherein moving the keyframe along the playback-time axis comprises moving the keyframe without changing the first content-time value, while displaying the frame in the video presentation that corresponds to the content-time value of the keyframe.

41. (Previously Presented) A computer readable medium storing an application, the application comprising a graphical user interface ("GUI"), the GUI comprising:

a display area for displaying a video presentation; and

a GUI graph of playback-time versus content-time with a selectable line bar representing a playback-time of the video presentation relative to a content-time of the video presentation, wherein a playback speed effect is specified by selecting and directly modifying the line bar.

42. (Previously Presented) The computer readable medium of claim 41, wherein the GUI further comprises a set of controls for allowing a user to modify the line bar by selecting a portion of the line bar and performing a drag operation.

43. (Currently Amended) The computer readable medium of claim 41, wherein the GUI graph is defined along at least:

a) a playback-time axis that represents time during a playback; and

b) a content-time axis that represents time within the video presentation.

44. (Previously Presented) The computer readable medium of claim 43, wherein a

selected portion of the line bar comprises a keyframe.

45. (Previously Presented) The computer readable medium of claim 44, wherein the keyframe has (i) a playback-time value along the playback axis and (ii) a content-time value along the content-time axis, the GUI further comprising a display of a frame that appears in the video presentation at a first content-time value corresponding to a selected playback-time value.

46. (Currently Amended) The computer readable medium of claim 45, wherein the GUI further comprises a display of the frame in the video presentation that corresponds to the content-time value of the keyframe wherein ~~the~~ a content of said display changes when the content-time value of the keyframe changes during a drag operation.

47. (Previously Presented) The computer readable medium of claim 41, wherein the line bar comprises a curve.

48. (Previously Presented) The computer readable medium of claim 47, wherein a slope of a portion of the curve determines a playback speed of a corresponding portion of a content clip.

49. (Previously Presented) The computer readable medium of claim 48, wherein a negative slope of a portion of the curve determines that the corresponding portion of the content clip is playing backward.

50. (Previously Presented) The computer readable medium of claim 47, wherein the GUI further comprises a set of controls for setting a curvature of said curve.

51. (Currently Amended) A computer readable medium storing a computer program for specifying playback speed effects for playing a video clip, said computer program for execution by at least one processor, the computer program comprising sets of instructions for:

a) providing a graphical user interface ("GUI") graph of a playback-time of

~~the~~ a video presentation relative to a content-time of the video presentation as a line bar defined along a playback-time axis and a content-time axis; and

b) accepting user inputs that specify a playback speed effect for the video presentation by selecting and directly modifying a portion of the line bar through a drag operation.

52. (Currently Amended) The computer readable medium of claim 51, wherein the GUI graph is defined along at least [[a]] the playback-time axis that represents time during a playback and [[a]] the content-time axis that represents time within the video presentation.

53. (Previously Presented) The computer readable medium of claim 52, wherein the selected portion of the line bar comprises a keyframe.

54. (Previously Presented) The computer readable medium of claim 53, wherein the keyframe has a value along the playback-time axis and a value along the content-time axis, wherein when the keyframe is selected, the keyframe has a first content-time value, the computer program further comprising a set of instructions for:

displaying a frame that appears in the video presentation at the first content-time value when the keyframe is selected.

55. (Currently Amended) The computer readable medium of claim 54, wherein the computer program further comprises a set of instructions for:

displaying the frame, in the video presentation, that corresponds to the content-time value of the keyframe when the content-time value of the keyframe changes during [[a]] the drag operation.

56. (Currently Amended) The computer readable medium of claim 55, wherein the computer program further comprises a set of instructions for:

displaying a graphical representation of the video presentation when the keyframe is selected,

wherein the set of instructions for accepting the user inputs comprises a set of instructions for moving the graphical representation along the playback-time axis when the drag operation is along the playback-time axis.

57. (Canceled)

58. (Currently Amended) The computer readable medium of claim 54, wherein [[a]] the set of instructions for accepting the user inputs comprises a set of instructions for moving the keyframe along the playback-time axis when the drag operation is along the playback-time axis.

59. (Currently Amended) The computer readable medium of claim 55, wherein [[a]] the set of instructions for accepting the user inputs comprises a set of instructions for moving the keyframe along the content-time axis when the drag operation is along the content-time axis.

60. (Currently Amended) The computer readable medium of claim 55, wherein the computer program further comprises sets of instructions for displaying a graphical representation of the video presentation when the keyframe is selected, wherein the set of instructions for accepting the user inputs comprises a set of instructions for:

a) moving the keyframe along the content-time axis when the drag operation is along the content-time axis; and

b) moving the graphical representation along the playback-time axis when the drag operation is along the content-time axis.

61. (Currently Amended) The computer readable medium of claim 54, wherein the set of instructions for accepting the user inputs comprises a set of instructions for moving the keyframe along the playback-time axis when:

a) the drag operation is along the playback-time axis; and

b) a particular keyboard key is being pressed.

62. (Currently Amended) The computer readable medium of claim 54, wherein the set of instructions for accepting the user inputs comprises a set of instructions for moving the keyframe along the content-time axis when:

a) the drag operation is along the playback-time axis; and

b) a particular key on ~~the~~ a keyboard is not being pressed.

63. (Currently Amended) The computer readable medium of claim 51, wherein the set of instructions for providing said GUI graph comprises a set of instructions for representing said line bar as a curve on said GUI graph.

64. (Currently Amended) The computer readable medium of claim 63, wherein the set of instructions for providing said GUI graph comprises a set of instructions for simultaneously showing said relationship at a plurality of points in [[a]] the playback-time.

65. (Previously Presented) A video editing system comprising:

a) a data storage medium for providing a video clip;

b) a video editing application for providing a set of playback speed effect settings through direct modifications of a user selectable line bar on a graph of playback-time versus content-time ;

c) an effects manager for:

i) receiving said set of playback speed effect settings from said video editing application;

ii) receiving said video clip from said data storage; and

iii) providing said video clip as individual frames to the video editing

application at a rate based on said playback speed effect settings.

66. (Previously Presented) The video editing system of claim 65, wherein the effects manager is further for providing two sets of frames corresponding to said video clip, wherein a first of said two sets of frames is offset in time from a second set of frames.

67. (Previously Presented) The video editing system of claim 65 further comprising a frame buffer, wherein said video editing application is for blending two frames of said two sets of frames into a blended frame and sending said blended frame to said frame buffer.

68. (Previously Presented) The computer readable medium of claim 16, wherein receiving said user inputs of modifications comprises receiving a drag operation to an end of a line that determines a slope of a portion of the line bar.

69. (Currently Amended) The computer readable medium of claim 16, wherein said computer program further comprises sets of instructions for:

a) receiving a selection of a point on the line bar;

b) displaying a line tangent to the line bar at said point, wherein the tangent line has a first end and a second end;

c) receiving user input comprising a selection of [[a]] the first end of said line and a drag operation on said first end;

d) modifying a slope of the line bar at the selected point in response to the drag operation on said first end; and

e) modifying other portions of the line bar to generate a smooth line bar consistent with the modified slope of the line bar at the selected point.

70. (Previously Presented) The computer readable medium of claim 69, wherein the first end of the tangent line and the second end of the tangent line are represented by knobs.

71. (Currently Amended) The computer readable medium of claim 16, wherein said computer program further comprises sets of instructions for displaying a plurality of time markers on the playback-time axis, wherein:

a first adjacent pair of time markers is separated by a first separation;

a second adjacent pair of time markers is separated by a second separation;

the first separation and the second separation each represent ~~the~~ a same amount of content-time; and

the first separation and the second separation each represent a different amount of playback-time.

72. (Currently Amended) The computer readable medium of claim 71, wherein said computer program further comprises sets of instructions for:

a) displaying, in a first color, a set of time markers that indicate playback-times during which the video clip is playing forward; and

b) displaying, in a second color that is different from the first color, ~~the~~ a set of time markers that indicate playback-times during which the video clip is playing backward.

73. (Previously Presented) The computer readable medium of claim 71, wherein said computer program further comprises a set of instructions for receiving user inputs of clicking and dragging on the time markers to define changes to the playback speed effects.

74. (Currently Amended) The computer readable medium of claim 16, wherein said computer program further comprises sets of instructions for, when ~~the~~ a user selects, with a GUI operation, a point on the line bar, displaying an indicator box around the selected point, wherein ~~the~~ a position of the indicator box relative to the selected point indicates the content-time represented by the selected point.

75. (Currently Amended) The computer readable medium of claim 74, wherein said computer program further comprises sets of instructions for:

a) moving the selected point along [[a]] the content-time axis of the graph in response to a user drag operation; and

b) moving the indicator box relative to the selected point to indicate ~~the~~ a new content-time of the selected point.

76. (Currently Amended) The computer readable medium of claim 74, wherein said computer program further comprises sets of instructions for:

a) moving the selected point along [[a]] the playback-time axis of the graph in response to a user drag operation; and

b) moving the indicator box along the playback-time axis, while maintaining the position of the indicator box relative to the moving point.

77. (Currently Amended) The method of claim 1 further comprising:

a) receiving a selection of a point on the line bar;

b) displaying a line tangent to the line bar at said point, wherein the tangent line has a first end and a second end;

c) receiving user input comprising a selection of [[a]] the first end of said line and a drag operation on said first end;

d) modifying a slope of the line bar at the selected point in response to the drag operation on said first end; and

e) modifying other portions of the line bar to generate a smooth line bar consistent with the modified slope of the line bar at the selected point.

78. (Previously Presented) The method of claim 77, wherein the first end of the tangent line and the second end of the tangent line are represented by knobs.

79. (Currently Amended) The method of claim 1 further comprising displaying a plurality of time markers on the playback-time axis, wherein:

a first adjacent pair of time markers is separated by a first separation;

a second adjacent pair of time markers is separated by a second separation;

the first separation and the second separation each represent ~~the~~ a same amount of content-time; and

the first separation and the second separation each represent a different amount of playback-time.

80. (Currently Amended) The method of claim 79 further comprising:

a) displaying, in a first color, a set of time markers that indicate playback-times during which the video clip is playing forward; and

b) displaying, in a second color that is different from the first color, ~~the~~ a set of time markers that indicate playback-times during which the video clip is playing backward.

81. (Previously Presented) The method of claim 79, wherein said computer program further comprises a set of instructions for receiving user inputs of clicking and dragging on the time markers to define changes to the playback speed effects.

82. (Currently Amended) The method of claim 1 further comprising, when the user selects, with a GUI operation, a point on the line bar, displaying an indicator box around the selected point, wherein ~~the~~ a position of the indicator box relative to the selected point indicates the content-time represented by the selected point.

83. (Currently Amended) The method of claim 82 further comprising:

a) moving the selected point along [[a]] the content-time axis of the graph in response to a user drag operation; and

b) moving the indicator box relative to the selected point to indicate ~~the~~ a new content-time of the selected point.

84. (Currently Amended) The method of claim 82 further comprising:

a) moving the selected point along [[a]] the playback-time axis of the graph in response to a user drag operation; and

b) moving the indicator box along the playback-time axis, while maintaining the position of the indicator box relative to the moving point.